

CLAIMS

What is claimed is:

- 5           1.     A method of integrating multiple military and civil data link networks, and automatically selecting one of the available networks, and then routing a message to the selected data link, the method comprising the steps of:
- 10                 a)     providing at least one data link network, each data link network comprising a means to transmit and receive civil and military messages;
- b)     sending and receiving the message through a physical interface between communication data link equipment and a host computer;
- 15                 c)     formatting the message for delivery to or from the selected data link network; and
- d)     routing the message to or from the selected data link network based on dynamic routing criteria.

2. The method of claim 1 further comprising the step of translating civil data link network messages into military data link network formats and translating military data link network messages into civil data link network formats.

3. The method of claim 1 further comprising the step of extracting information from the civil and military messages for use in constructing ad hoc messages.

4. The method of claim 3 wherein the ad hoc messages comprises civil air traffic control information.

5. The method of claim 1 wherein the dynamic routing criteria comprise priority, security, urgency, size and bandwidth.

6. The method of claim 1 wherein the step of routing the message to or from the selected data link network comprises routing the message to an alternate data link network if the selected data link network malfunctions.

7. The method of claim 1 further comprising the step of determining a number of available data link networks, a type of each available data link network, and a working status of each available data link network.

8. The method of claim 7 further comprising the step of computing a single communication performance indicator for the available data link networks.

9. The method of claim 7 further comprising the step of constructing and transmitting a communication status message that comprises the computed communication performance indicator.

10. A method of integrating multiple military and civil end systems, and automatically transmitting messages to each end system and receiving messages from each end system, the method comprising the steps of:

a) transmitting and receiving the messages through a physical interface between an end system apparatus and a host computer;

b) formatting the messages for delivery to or from a selected end system apparatus; and

c) routing the messages to or from the selected end system based on dynamic routing criteria.

11. The method of claim 10 further comprising the step of translating civil end system messages into military end system message formats and translating military end system messages into civil end system message formats.

12. The method of claim 10 further comprising the step of extracting information from each end system message for use in constructing an ad hoc message.

13. The method of claim 12 wherein the ad hoc message comprises operational control and maintenance information.

14. The method of claim 12 further comprising the step of  
5 analyzing the extracted information from each end system message to determine trend information over a predefined time period.

15. The method of claim 14 further comprising the step of constructing a trend message.

16. The method of claim 14 further comprising the step of  
10 computing alerts and decision aides from the extracted information based upon predefined criteria.

17. The method of claim 16 further comprising the step of  
15 constructing an alert and decision aide message.

18. The method of claim 10 wherein the dynamic routing criteria comprise priority, security, urgency, size and bandwidth.

19. The method of claim 10 further comprising the step of determining a number of available end systems, a type of each available end system, and a working status of each available end system.

20. The method of claim 19 further comprising the step of computing a single system performance indicator for the available end systems.

21. The method of claim 19 further comprising the step of constructing and transmitting a computed system performance indicator message.

22. An apparatus for integrating military and civil data link networks and automatically selecting and routing a message to a selected data link, the apparatus comprising:

5                   at least one data link, each data link comprising a means to transmit and receive civil and military messages;

                  a physical interface between communication data link equipment and a host computer for sending and receiving the message;

10                  a means for formatting the message for delivery to or from the selected data link; and

                  a router for routing the message to or from the selected data link based on dynamic routing criteria.